

AMENDMENT

Serial Number: 10/673,638

Filing Date: September 30, 2003

Title: PERFORMANCE INDEX FOR ABSORBENT ARTICLES HAVING IMPROVED LEAKAGE PERFORMANCE

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REMARKS

Claims 1-65 are pending in the present application.

The present application has been amended. In particular, claims 1, 7, 13, 19, 63 and 64 have been amended to clarify that the value of the front pad absorbency under load of the absorbent article (AUL) is about 23 grams of fluid/gram of material or more, and/or the total basis weight of the absorbent core is within the range of from about 20 g/m² to about 150 g/m². Support for this language is found throughout the application, including original claims 25, 26, and 27, and paragraph [122], where it is noted: "The total basis weights of the absorbent composite 28 including fibrous materials, SAP, tissue, additional layers, and additives, are anywhere from about 100-600 grams per square meter [(0.01-0.06 g/cm²)]. The most preferred total basis weight of the absorbent composite 28 is from about 250 to about 350 grams per square meter [(0.025-0.035 g/cm²)]. It is preferred that when a tow fiber is used, the total basis weight of the absorbent composite is within the range of from about 20 to about 300 g per square meter [(0.0020-0.03 g/cm²)], and most preferably from about 100 to 150 grams per square meter [(0.01-0.015 g/cm²)]."

In addition, claims 25, 31, and 44 have been amended to clarify the total capacity of the article Tc is in grams. Paragraph [0269] has been revised to recite the overall leakage performance index (PI_{3OL}) as listed in claim 13.

Accordingly, no new matter is added through these amendments. In view of the above amendments and the following remarks, reconsideration is respectfully requested.

35 U.S.C. § 112 Rejections

Claims 1-65 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. This ground of rejection is respectfully traversed.

Independent claims 1, 7, 13, and 19 are directed to absorbent articles having improved leakage protection comprising a top sheet, a back sheet, and an absorbent core disposed between the top sheet and the back sheet, whereby the absorbent article has a 3 variable urine only leakage performance index (PI_{3UL}) of less than about 3.0, a five variable urine only leakage Performance Index (PI_{5UL}) of less than about negative 6.4, a 3 variable overall leakage performance index (PI_{3OL}) of less than about negative 2.65, and a five variable overall leakage

Performance Index (PI_{SOL}) of less than about negative 9.3, respectfully. The leakage performance index equations are functions of at least three variables, and in certain embodiments five variables, including, the surrounds efficiency, third void strikethrough, total capacity of the absorbent article, percent utilization of the absorbent core, and front pad absorbency under load of the absorbent article (AUL). Independent claims 25, 38, 63, 64, and 65 are directed to methods for using and preparing absorbent articles having improved leakage protection, methods for designing articles having improved leakage protection, or methods of measuring and determining the leakage performance index of an absorbent article.

The Examiner states that the "claims set forth the physical characteristics desired of the composite alone rather than the specific composition of the composite in the end product." The Examiner, "relying" on *Ex parte Slob*, 157 USPQ 172 (Bd. Pat. App. & Int. 1967), states that "such claims could cover any conceivable combination of materials whether presently existing or which might be discovered in the future and which would impart the desired characteristic, i.e., the claims are too broad and indefinite since they purport to cover everything having the claimed characteristics regardless of its composition." In *Ex parte Slob*, the Board affirmed a rejection under 35 U.S.C. § 112, second paragraph, of a process claim reciting "a liquefiable substance having a liquefaction temperature from about 40°C to about 300°C and being compatible with the ingredients in the powdered detergent composition." *Ex parte Slob*, at 173. The Board stated that "the expression [is] too broad as it appears to read upon materials that could not possibly be used with a powdered detergent composition to accomplish the purposes intended." *Id.* The Board stated that "we see no reason for the allowance of claims drawn to all substances which are totally unrelated to those ingredients shown as suitable by appellant and which are merely claimed by the designation of desired properties." *Id.*

Conversely, the claims of the present application, when read in view of the specification, set forth a specific composition of an absorbent article having improved leakage performance. The claims of the present application limit the composition of the top sheet, back sheet, and absorbent core to materials only suitable for use as a top sheet, back sheet, or absorbent core of an absorbent article that also satisfy the leakage performance index equations. For example, a typically suitable top sheet material as described in paragraph [0101], i.e., a material that is "relatively liquid-pervious currently known in the art or later discovered that permits the passage

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of a liquid there through", may not achieve the desired leakage performance index of the present application. Therefore, such a typically suitable top sheet material would not be suitable for the absorbent article of the present application. Indeed, the specification specifically limits the composition of the top sheet and back sheet to materials suitable for use as a top sheet or back sheet of an absorbent article "that are capable of achieving the desired Performance Index." Paragraph [0091]. In contrast to *Ex parte Slob*, the claims of the present application do not cover materials "that could not possibly be used" as a top sheet, back sheet, or absorbent core of an absorbent article.

In addition, the claims of the present application are directed to an absorbent article comprising a top sheet, a back sheet, and an absorbent core that have specific structural limitations to provide improved leakage performance, as determined by the leakage performance index equations. As amended, the claims require the absorbent core to have a total basis weight within the range of from about 20 g/m² to about 150 g/m², and an AUL value of about 23 grams of fluid/gram of material or more. Moreover, the leakage performance index equations are functions of at least three variables, and in certain embodiments five variables, including, the surrounds efficiency, third void strikethrough, total capacity of the absorbent article, percent utilization of the absorbent core, and AUL. The five variables of the leakage performance index equations can interact with each other such that increasing the value of one factor may have the effect of decreasing another, and thereby reducing leakage performance. Paragraph [0263]. For example, the total capacity of the absorbent article can be improved by increasing the amount of superabsorbent polymer (SAP) in the absorbent core or using a SAP having higher absorbency characteristics (*e.g.*, a higher AUL). However, this may adversely affect other factors of the leakage performance index, *e.g.*, the surrounds efficiency or the percent utilization of the core. Paragraph [0263]. Therefore, the claims of the present application limit the structural composition of the top sheet, back sheet, and absorbent core of the absorbent article because the overall effect of various combinations of these structures must satisfy the leakage performance index equations as recited in the present claims.

Accordingly, Applicant respectfully submits that amended claims 1-65 fully comply with 35 U.S.C. § 112, second paragraph.

35 U.S.C. §§ 102(e) and 103 Rejections

Claims 1-65 stand rejected under 35 U.S.C. § 102(e) as being anticipated by or, in the alternative, under 35 U.S.C. § 103 as being obvious over United States Patent 4,834,735, entitled "High Density Absorbent Members Having Lower Density And Lower Basis Weight Acquisition Zones", to Alemany *et al.* ("Alemany"). Each of these grounds of rejection is respectfully traversed.

As described above, independent claims 1, 7, 13, 19, 25, 38, 63, 64, and 65 are directed to an absorbent article that provides improved leakage protection, methods for using and preparing absorbent articles having improved leakage protection, methods for designing articles having improved leakage protection, or methods of measuring and determining the leakage performance index of an absorbent article.

A. Rejection under 35 U.S.C. § 102(e)

The Examiner characterizes Alemany as disclosing "an absorbent core and by description, a method of designing an absorbent core comprising a topsheet and backsheet and absorbent core between the topsheet and backsheet" that teaches "similar materials for the core (col. 7, line 58 through col. 9, line 28, topsheet, and backsheet)" and meets "the structural requirements of the claim[s]."

Applicant respectfully submits that Alemany fails to disclose, as the present claims recite, an absorbent article comprising a front pad that has a front pad absorbency under load of about 23 grams of fluid/gram of material or more. Indeed, the Examiner states that "Alemany does not specifically disclose the absorbent core comprises a front pad that has an absorbency under load as claimed." Claims 1, 7, 13, 19, 63 and 64 have been amended to clarify that the value of the front pad absorbency under load of the absorbent article is about 23 grams of fluid/gram of material or more. Accordingly, Alemany does not disclose, nor is it inherent therein, an absorbent article as recited in the present claims. Therefore, claims 1-65 are not anticipated by Alemany.

B. Rejection under 35 U.S.C. § 103

The Examiner characterizes Alemany as "recogniz[ing] the size and concentration of materials of the absorbent core can be varied and this will affect the absorbent capacity in

specific regions (col. 7, lines 57-67; col. 12, lines 41-59; col. 20, lines 6-68). Alemany, therefore, recognizes the absorbent capacity is a result effective variable of the materials used to makeup the core. It is the examiner's second position that it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the article of Alemany with the claimed absorbent capacity, since discovering an optimum value of a result effective variable involves only routine skill in the art."

Applicant respectfully submits that Alemany does not recognize leakage performance as a result effective variable, *i.e.*, a variable which achieves a recognized result. A particular parameter must first be recognized as a result effective variable before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618 (Cust. & Pat.App. 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result effective variable.). Assuming *arguendo* that Alemany recognizes "absorbent capacity" as a result effective variable, the present application is directed to an absorbent article providing improved leakage performance, as determined in accordance with the leakage performance index equations. The leakage performance index equations are functions of at least three variables, and in certain embodiments five variables, in which "absorbent capacity" is only one of the variables. Thus, Alemany does not recognize leakage performance as a result effective variable.

Furthermore, the present application is directed to an absorbent article providing improved leakage protection as determined in accordance with the leakage performance index equations. As described above, the leakage performance index equations are functions of at least three variables, and in certain embodiments, five variables. The AUL is only one of the variables related to predicting leakage performance of an absorbent article in the present application. Any or all of the five variables can be modified to achieve the overall result of improving the leakage performance index of the absorbent article. In contrast to the present application, Alemany does not recite a range of leakage performance values, or any of the complex mathematics, *e.g.*, regression analysis, required for determining the leakage performance index of absorbent articles as claimed, or how to specially design or test an

absorbent article to meet the requirements of improved leakage performance as claimed.

Accordingly, Alemany does not recognize, nor is it inherent therein, leakage performance as a result effective variable.

Moreover, Applicant respectfully submits that Alemany does not meet the structural requirements of the claims of the present application. In Alemany, "the acquisition zone 56 must have both a relatively lower average density and lower average basis weight per unit area than the storage zone 48 to establish the preferred capillary force gradient between them." Col. 12, lines 11-16. The Examiner characterizes the acquisition zone 56 of Alemany as analogous to the insult point of the present application. Page 6 of the Office Action. The present application states that the front pad total absorptive capacity under load test utilized a sample "removed from substantially in or around the insult point of the absorbent article. The insult point of the absorbent garment was determined by reference to FIG. 2." The location of the insult point is "the midpoint of the width of the absorbent core." Paragraph [0177]. Thus, the insult point and absorbent core in the present application utilize the same super absorbent polymer distributed within a fibrous structure. Therefore, the density and basis weight of the insult point is the same as the absorbent core in the present application because the insult point is part of the absorbent core. The explicit recital in Alemany that the density and basis weight of the acquisition zone 56 must be lower than the density and basis weight of the storage zone 48 teaches away from the absorbent article as presently claimed. Accordingly, Alemany does not disclose, nor is it inherent therein, an insult point having the same density and basis weight as the absorbent core as presently claimed.

Furthermore, Alemany does not disclose or teach an absorbent core having a total basis weight within the range of from about 20 to about 150 g per square meter [(0.0020-0.015 g/cm²). Alemany recites that "The acquisition zone 56 preferably has a density of from about 0.03 to about 0.24 g/cm³, more preferably from about 0.05 to about 0.15 g/cm³ for an absorbent member 42 containing about 15% by weight of particles of absorbent gelling material. The basis weight of such an acquisition zone 56 will preferably range from about 0.015 to about 0.1 g/cm² and more preferably from about 0.018 to about 0.06 g/cm². For an absorbent member 42 containing about 50% by weight of particles of absorbent gelling material, the density will typically range from about 0.05 to about 0.41 g/cm³ with a basis weight of from about 0.025 to about 0.17

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g/cm².” Col. 14, lines 42-54. Alemany also recites that “the storage zone 58 will generally have a density of from about 0.06 to about 0.4 g/cm³, and more preferably within the range of from about 0.09 to about 0.20 g/cm³ for an absorbent member 42 containing about 15% by weight of particles of absorbent gelling material. The basis weight of such a storage zone 58 can range from about 0.02 to about 0.186 g/cm², preferably from about 0.038 to about 0.12 g/cm². For an absorbent member 42 containing about 50% by weight of particles of absorbent gelling material, the density will typically range from about 0.1 to about 0.68 g/cm³ with a basis weight from about 0.034 to about 0.31 g/cm².” Col. 13, line 60 – col. 14, line 4. Accordingly, Alemany does not disclose or teach, nor is it inherent therein, an absorbent core having a total basis weight within the range of from about 20 to about 150 g per square meter (0.0020-0.015 g/cm²) as claimed. Therefore, claims 1-65 are patentable over Alemany.

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CONCLUSION

In view of the above remarks, Applicant respectfully submits that Alemany does not disclose or teach, nor is it inherent therein, at least the following: (1) an absorbent article having a front pad absorbency under load value of about 23 grams of fluid/gram of material or more, or (2) an absorbent core having a total basis weight within the range of from about 20 g/m² to about 150 g/m² (0.0020-0.015 g/cm²). Accordingly, the claims are patentable over Alemany.

Therefore, reconsideration and allowance of claims 1-65, as amended, are respectfully requested.

It is believed that no fees are due in connection with filing this Amendment. However, in the event it is determined that any fees are due, the Commissioner is hereby authorized to charge the undersigned's Deposit Account No. 50-3790.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 20 day of June, 2007.

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